

SPECIFICATION

MOUNTING ASSEMBLY FOR DATA STORAGE DEVICES

BACKGROUND OF THE INVENTION

1. FIELD OF THE INVENTION

[0001] The present invention relates to mounting assemblies, and particularly to mounting assemblies that readily attach data storage devices in computer enclosures.

2. RELATED ART

[0002] Various data storage devices are installed in computers for communication and handling of data. Such devices include, for example, hard disk drives, floppy disk drives and CD-ROM drives.

[0003] A conventional data storage device is directly attached to a computer enclosure with bolts. However, attachment with bolts is unduly complicated and time-consuming.

[0004] Thus rails have been developed to mount a data storage device to a computer enclosure. Such rails are disclosed in United States Patent No. 5,510,955. A mounting bracket forms two pairs of leader rails on opposite sides thereof. Each pair of leader rails defines a pair of first coaxial holes. A pair of guide rails is respectively attached to opposite sides of a data storage device with bolts. Each guide rail comprises a pair of flanges defining a pair of second coaxial holes. The assembly of the storage device and guide rails is inserted into the mounting bracket by sliding the guide rails along the leader rails. A pair of locking pins is then extended through the first and second coaxial holes to thereby secure the storage device within the mounting bracket. However, the needed additional rails increase costs. Furthermore, mounting the rails to the data storage device with bolts is still

unduly complicated and time-consuming.

SUMMARY OF THE INVENTION

[0005] Accordingly, an object of the present invention is to provide a mounting assembly which can readily attach data storage devices within a mounting bracket and which can readily release the data storage devices from the mounting bracket.

[0006] To achieve the above-mentioned object, a mounting assembly in accordance with the present invention comprises a mounting bracket having first and second side panels, and a clip attached on the second side panel. A plurality of grooves is defined in the first side panel, for slidably receiving screws that are attached on sides of data storage devices. A plurality of pairs of through holes is defined in the second side panel. Each pair of through holes corresponds to a groove. The clip comprises an arcuate press portion, a pair of bent portions bent outwardly from opposite free ends of the press portion, a pair of connecting portions extending from free ends of the bent portions and away from each other, and a pair of hands extending inwardly from free ends of the connecting portions. Each hand has a palm with barbs. In use, the palms are extended through the corresponding through holes into corresponding locking holes defined in an opposite side of the storage device. The barbs are firmly engaged with the storage device at the locking holes. The storage device is thereby secured in the mounting bracket. In removing the storage device, the press portion is pressed inwardly to cause the hands to elastically move away from each other. The barbs are thus released from the storage device, and the clip unlocks the storage device from the mounting bracket.

[0007] Other objects, advantages and novel features of the present invention will be drawn from the following detailed description of the

preferred embodiment of the present invention with attached drawings, in which:

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] Fig. 1 is an exploded view of a mounting assembly in accordance with the present invention, together with a data storage device;

[0009] Fig. 2 is a perspective view of a clip of the mounting assembly of Fig. 1; and

[0010] Fig. 3 is a fully assembled view of Fig. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT


[0011] Referring to the attached drawings, Fig. 1 shows a mounting assembly in accordance with the present invention together with a data storage device 30. The mounting assembly comprises a mounting bracket 10 and a clip 40. The data storage device 30 may be a CD-ROM drive, a hard disk drive, a floppy disk drive, and so on. For convenience, the data storage device 30 is hereinafter designated as a CD-ROM drive 30. A pair of locking holes 32 is defined in each of opposite sides of the CD-ROM drive 30. A pair of screws 34 is for being threadedly engaged in the locking holes 32 in one side of the CD-ROM drive 30.

[0012] The mounting bracket 10 comprises a bottom panel 11, a first side panel 12, and a second side panel 14. The first side panel 12 extends perpendicularly upwardly from a side edge of the bottom panel 11. The second side panel 14 extends perpendicularly upwardly from an opposite side edge of the bottom panel 11. A plurality of parallel grooves 16 is defined in the first side panel 12. A plurality of pairs of spaced through holes 18 is defined in the second side panel 14. Each pair of spaced

through holes 18 corresponds to a groove 16 of the first side panel 12. A pair of supporting tabs 22 is inwardly stamped from each of the first and second side panels 12, 14, below a top groove 16 and below topmost through holes 18 respectively.

[0013] Referring to Fig. 2, the clip 40 is integrally stamped from a strip of metal. The clip 40 comprises a slightly arcuate central press portion 42, a pair of bent portions 44, a pair of connecting portions 46, and a pair of hands 47. The bent portions 44 are bent in substantially the same direction, outwardly and generally perpendicularly from opposite free ends of the press portion 42 respectively. The connecting portions 46 extend generally perpendicularly from free ends of the bent portions 44 respectively, and away from each other. The hands 47 extend in substantially the same direction perpendicularly inwardly from free ends of the connecting portions 46 respectively. Each hand 47 has a palm 48 at an end thereof. A distance between the palms 48 is slightly less than a distance between any pair of through holes 18 of the mounting bracket 10. A pair of barbs 49 is horizontally formed on top and bottom edges respectively of each palm 48. The barbs 49 generally extend toward a center of the clip 40.

[0014] In use, the CD-ROM drive 30 is slid into the mounting bracket 10. The screws 34 of the CD-ROM drive 30 enter the top groove 16 of the mounting bracket 10. When the rearmost screw 34 reaches an end portion of the top groove 16, the through holes 18 of the mounting bracket 10 are aligned with the corresponding locking holes 32 of the CD-ROM drive 30. The clip 40 is then placed beside the second side panel 14, with the palms 48 located adjacent the corresponding through holes 18. The press portion 42 is pressed inwardly. The press portion 42, bent portions 44 and connecting portions 46 are elastically deformed. The hands 47 therefore move away from each other, and cause the palms 48 to slide into the corresponding through holes 18 and locking holes 32. When the inward pressing force on



the press portion 42 is released, the press portion 42, bent portions 44 and connecting portions 46 elastically return part of the way back to their original positions. The barbs 49 of the palms 48 are therefore firmly engaged with the CD-ROM drive 30 at the locking holes 32. The CD-ROM drive 30 is thus secured in the mounting bracket 10.

[0015] In removing the CD-ROM drive 30, the press portion 42 of the clip 40 is pressed inwardly again. This causes the hands 47 to elastically move away from each other. The barbs 49 are thus released from the CD-ROM drive 30. The clip 40 is then readily pulled away from the second side panel 14 and disengaged from the CD-ROM drive 30. The CD-ROM drive 30 is readily slid out from the mounting bracket 10.

[0016] It is understood that the invention may be embodied in other forms without departing from the spirit thereof. Thus, the present example and embodiment is to be considered in all respects as illustrative and not restrictive, and the invention is not to be limited to the details given herein.